

**IAPR NEWSLETTER**  
**Vol. 1 No. 1 August 1978**

## CHAIRMAN'S CORNER LETTER

During the Second (1974) International Joint Conference on Pattern Recognition in Copenhagen, the Standing Committee approved the proposal of establishing a permanent international professional organization for pattern recognition. After two year's preparation, the International Association for Pattern Recognition (IAPR) was formally established at the Third (1976) International Joint Conference on Pattern Recognition at Coronado, California, and the Standing Committee approved the Constitution of IAPR and elected the Officers of the Executive Committee. Three committees, Publication, Conference, and Membership were appointed for each. The IAPR organization chart is shown in Figure 1. A special committee drafted the IAPR Bylaws which were then approved by the Standing Committee early in 1977. Also IAPR applied for, and was granted, affiliate member status in IFIP, the International Federation for Information Processing. IAPR was formally incorporated under the laws of the State of New York in January 1978.

In the area of publication, a regularly published IAPR Bulletin is our initial goal. Professor Tom Cover has been taking a major responsibility of this effort. In the area of conferences, the Fourth International Joint Conference on Pattern Recognition will be held in Kyoto, Japan, November 7-10, 1978. Professor Michael Watanabe is now receiving proposals for our Fifth (1980) Conference. More than ten national organizations have already contacted the Membership Committee. It is expected that by the time we meet in Kyoto, we will have representatives from about fifteen national organizations for our first Governing Board meeting.

I would like to use this opportunity to thank everyone who has shared our effort and goal for the International Pattern Recognition Community. We certainly welcome any of your comments and suggestions about IAPR.



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Professor M. S. Watanabe  
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### CURRENT BOOK PUBLICATIONS

#### Syntactic Pattern Recognition, Applications

Editor: K. S. Fu  
Publisher: Springer-Verlag, Berlin Heidelberg,  
New York

The book deals with nine different applications of the syntactic approach to pattern recognition. They are waveform peak recognition, ECG interpretation, spoken word recognition, Chinese Characters recognition, shape discrimination, recognition of mathematics, notation, fingerprint classification, modeling of satellite data and machine parts recognition. The syntactic approach is a new and powerful approach to pattern recognition. Its applications are certainly interesting to many different areas.

Practical applications of syntactic pattern recognition have never been systematically documented. This book, written by a group of experts in syntactic pattern recognition, gives a detailed account of each of the nine practical applications and problems for future research. Computation algorithms for implementation are also included. An introduction chapter provides the necessary background for the understanding of other chapters.

#### Digital Pattern Recognition

Editor: K. S. Fu  
Publisher: Springer-Verlag, Berlin Heidelberg,  
New York  
Cost: \$32.80

This book provides an overview of recent advances in the area of pattern recognition. Theoretical topics covered include statistical pattern recognition, cluster analysis, and syntactic pattern recognition. Application-oriented topics discussed include picture recognition, and speech recognition and understanding. It serves as a very useful and up-to-date reference book for scientists and engineers in universities and industry. Students will benefit from the tutorial style of the different review articles

#### Associative Memory

Author: T. Kohonen  
Publisher: Springer-Verlag, Berlin Heidelberg,  
New York  
Cost: \$19.70

This monograph is an introduction to the mathematical theory of associative memory. As it is addressed to researchers and students working in many different fields, for instance, cybernetics, computer science, biomathematics, and mathematical psychology. A considerable amount of tutorial material has been included: mathematical operations in linear vector spaces, matrix equations, principles of associative data structures, logic description of search operations, physical implementation of associative memories, and a review of the biological foundation of memory. The primary objective, however, is to familiarize the reader with various processes and transforms by which associations between patterned items can be represented and stored. This approach makes it possible to relate many abstract concepts of information processing to the theories of learning, pattern recognition estimation theory, etc., in a fresh way. The implications of these methods to the study of biological associative memory are also considered.

#### Digital Picture Analysis

Editor: A. Rosenfeld  
Publisher: Springer-Verlag, Berlin Heidelberg,  
New York  
Cost: \$29.60

The book contains review papers on the computer analysis of pictorial information in five application areas: remote sensing, radiology, high-energy physics, cytology, and character recognition. Each paper discusses the need for image processing in that particular area; hardware and software requirements; techniques for preprocessing, matching, segmenting, classifying, and recognizing images; together, the papers provide a broad, practically oriented introduction to the important topic of digital picture analysis.

#### Structural Pattern Recognition

Author: T. Pavlidis  
Publisher: Springer-Verlag, Berlin Heidelberg,  
New York  
Cost: \$19.90

The book deals primarily with the encoding of pictures into mathematical structures which can be handled by classical pattern recognition techniques. It emphasizes methodology, showing the connection between various approaches, and represents the first work to provide a systematic description of the process of obtaining measurements from pictorial data.

This volume is intended as a text for a one-semester advanced course in pattern recognition and is based on class notes for a course on this subject given at Princeton University.

Topics discussed are: mathematical techniques for curve fitting, including splines; discrete geometry picture segmentation, including edge detection and data structures; scene analysis by graph matching of curves, including Fourier descriptors, chain-codes, and polygonal analysis of the shape of regions by integral techniques (moments), thinning (medial axis transformation) and decomposition; and tree and graph grammars.

#### Digital Picture Processing

Authors: Azriel Rosenfeld and Avinash C. Kak  
Publisher: Academic Press, Inc.  
Cost \$28.50

This book is a completely revised, enlarged, and updated version of Azriel Rosenfeld's Picture Processing by Computer (Academic Press, 1969). This new publication supersedes the earlier work, incorporating much new material and covering the principal developments in the field over the intervening years. It features a much more extensive mathematical treatment of picture digitization, compression, and restoration. In addition, the authors have provided brief introductions to linear systems theory and the theory of stochastic processes, as well as numerous exercises, thus making their presentation easily accessible to students in electrical engineering and computer science.

Classification and Clustering  
Editor: J. Van Ryzin  
Publisher: Academic Press, 1977

Pattern Recognition: Theory and Application  
Editors: K. S. Fu and A. B. Whinston  
Publisher: Noordhoff International Publishing  
Company, Leyden, The Netherlands  
1977

Digital Image Restoration  
Authors: H. C. Andrews and B. R. Hunt  
Publisher: Prentice-Hall, Incorporated, 1977

Interactive Pattern Recognition  
Author: Y. T. Chien  
Publisher: Marcel Dekker, New York, 1978

Pattern Recognition: Ideas in Practice  
Editor: B. G. Batchelor  
Publisher: Plenum Press, New York, 1978

Digital Image Processing  
Authors: R. C. Gonzalez and P. Wintz  
Publisher: Addison-Wesley Publishing Company  
Incorporated, 1977

The following publications are available through  
IEEE Computer Society  
5855 Naples Plaza, Suite 301  
Long Beach, CA 90803

1978 Conference on Pattern Recognition and Image  
Processing  
Member price: \$18.75  
Non-member price \$25.00

1977 Conference on Pattern Recognition and Image  
Processing  
Member price: \$15.00  
Non-member price: \$20.00  
Catalog No. 77CH1208-9C

1975 Conference on Computer Graphics, Pattern  
Recognition and Data Structure  
Member price: \$18.75  
Non member price: \$25.00  
Catalog No. 75CH0981-1C

Third International Joint Conference on Pattern  
Recognition - 1976  
Member price \$18.75  
Non-member price: \$25.00  
Catalog No. 76CH1140-3C

Second International Joint Conference on Pattern  
Recognition - 1974  
Member price: \$18.75  
Non-member price: \$25.00  
Catalog No. 74CH0885-4C

1973 Pattern Recognition Conference  
Member price: \$18.75  
Non-member price: \$25.00  
Catalog No. 73CH0821-9C

1976 Symposium on Computer Aided Diagnosis of Medi-  
cal Images

Member price: \$9.00  
Non-member price: \$12.00  
Catalog No. 76CH1170-0C

1976 Workshop on Pattern Recognition Applied to  
Oil Identification  
Member price: \$9.00  
Non-member price: \$12.00  
Catalog No. 76CH1247-6C

1977 International Symposium on Computer Aided Seis-  
mic Analysis and Discrimination  
Member price: \$9.00  
Non-member price: \$12.00  
Catalog No. 77CH1244-3C

1977 Workshop on Picture Data Description and  
Management  
Member price: \$12.00  
Non-member price: \$16.00  
Catalog No. 77CH1187-4C

#### UPCOMING CONFERENCE OF INTEREST

##### The 4th IJCPR

The Fourth International Joint Conference on Pattern  
Recognition will be held on November 7-10, 1978,  
in Kyoto, Japan. The conference, after three  
successful previous conferences, will offer a  
chance for all researchers in this field to become  
acquainted with the most advanced results of pattern  
recognition research all over the world, and  
especially in Japan. It will offer a place for  
intimate communication among the researchers, and  
for the discussions of a variety of topics in pattern  
recognition

This conference is the first international meeting  
since the establishment of the International  
Association for Pattern Recognition (IAPR), an  
affiliate member of the International Federation  
for Information Processing (IFIP).

The dates of the conference are so arranged that it  
will be convenient for foreign participants also to  
attend the International Conference on Cybernetics  
and Society, which will be held on November 3-5  
(Tokyo) and 7 (Kyoto), 1978.

Interactive Techniques in Computer Aided Design,  
September 21-23, 1978  
Location: Palazzo dei Congressi Fiera di Bologna,  
Italy

Ultrasonics Symposium, September 25-27, 1978  
Location: Philadelphia, Pennsylvania

Cybernetics and Society, November 3-5, 1978  
Location: Tokyo, Japan

Acoustic, Speech and Signal Processing, April 2-4,  
1978  
Location: International Inn, Washington, D.C.

National Computer Conference, June 4-7, 1979  
Location: New York City

Ultrasonics, Symposium, October 24-26, 1978  
Location: New Orleans, Louisiana

NATIONAL ORGANIZATIONS  
APPROVED BY MEMBERSHIP COMMITTEE

- Denmark: Danish Pattern Recognition Society; Category A membership, 41 members. Representative: Dr. P. W. Becker Spurveskjul 6, DK 2000 F, Denmark
- England: British Pattern Recognition Association; Category A membership, 81 members. Representative: Prof dr. D. Rutovitz Medical Research Council, Clinical and Population Cytogenetics Unit, Western General Hospital, Crewe Road, Edinburgh, England
- Finland: Pattern Recognition Society of Finland; Category A membership, 34 members. Representative: Teuvo Kohonen Dept of Technical Physics, Helsinki University of Technology, SF-0215 Espoo 15, Finland
- France: Group "Pattern Recognition and Artificial Intelligence" of AFCET (Association Française pour la Cybernetique Economique et Technique; Category B membership. Representatives: Pro. G. Perennou and Prof. dr. J. C. Simon, Institut de Programmation; Tour 55-65, 11 Quai Saint-Bernard, 75005 Paris, France
- Germany: Deutsche Arbeitsgemeinschaft fur Mustererkennung, F. R. Germany, Category B membership. Representatives: Prof. dr. ing. H. Kazmierczak and Prof. dr. ing. H. Marko, address: Prof. Marko, Arcis-strasse 21, D-8000 Munchen 2, Postfach 202420, West Germany
- Italy: Gruppo di Lavoro per il Pattern Recognition (Working Group for PR) of A.I.C.A. (Italian Association for Automatic Computation); Category A membership, about 50 members. Representative: Prof. E. R. Cainaiello, Universita di Salerno, Via Vernieri, 42, 84100, Salerno, Italy.
- Japan: Audio-Visual Information Research Group (AVIRG); Category B membership, 279 members. Representatives: Prof. Jin-ichi Nagumo, Dept. of Mathematical Engineering and Instrumentation Physics, Faculty of Engineering, University of Tokyo, Tokyo, Japan. Dr. Ei-ji Yodogawa, 4th Res. Section, Musashino Electrical Communication Laboratory, N.T.T., 3-9-1 Midori-cho Musashino-shi, Tokyo, Japan
- Mexico: Chapter on Pattern Recognition and Image Processing from the "Asociacion Mexicana de Ingenieros en Comunicaciones Electri-

cas y Electronica" (AMICEE); Category A, 20 members. Representative: Prof. A. Guzman, 11 Mas-Unam, Aptdo 20-726, Mexico 20, D.F. Mexico

- The Netherlands: Werkgezemschap Patroonherkennen (Working Group for Pattern Recognition) of the Netherlands Psychonomics Foundation; Category A membership, 35 members. Representative: Prof dr. ir. C.J.D.M. Verhagen, University of Technology, Dept. of Applied Physics, Lorentzweg 1, 2628 CJ Delft, The Netherlands
- Sweden: Svenska Sallskapet for Automatiserad Bildanlys (SSAB) (Swedish Society for Automated Image Analysis); Category A membership, about 100 members. Representative: Dr. T. Orhaug, National Defense Research Institute, Box 1165, S-581, 11 Linkoping, Sweden
- U.S.A.: IEEE Computer Society; Category C membership, about 3000 members with activities in the field of IAPR. Representatives: Professor M. Watanabe, Professor A. Rosenfeld, Professor K. S. Fu, Professor H. Freeman; address: Professor Freeman, Rensselaer Polytechnic Institute, Troy, N.Y. 12181

Individual members: R. A. Jarvis, 1 Palooa Place, Duffy, A.C.T., 2611 Australia. Dr. F. L. Leberl, Institute for National Surveying and Photogrammetry, Rechbauerstrasse 12, A-8010 Graz, Austria

CONSTITUTION OF THE INTERNATIONAL  
ASSOCIATION FOR PATTERN RECOGNITION

Article I: Name

Section 1.1

The organization shall be known as the International Association for Pattern Recognition. Hereafter 'Association' shall refer to this organization.

Article II. Field of interest and objectives of the Association

Section 2.1

The field of interest is Pattern Recognition and the allied branches of engineering, together with the related arts and sciences; the objective is the advancement of theory and practice in the field of interest.

Section 2.2

The Association shall organize International Conferences on Pattern Recognition, may publish periodicals, newsletters, proceedings or special publications and may practice all other proper means to further its objectives

Article III: Members

Section 3.1

Members may be either scientific or professional organizations or individuals working in the field of interest.

Section 3.2

Both types of members shall be entitled to all rights of the Association in as far as practical. The Bylaws shall provide criteria and procedures for enrollment of organizations and individuals.

Article IV: Officers

Section 4.1

The Association shall have a Governing Board and an Executive Committee.

Section 4.2

The Governing Board shall consist of representatives of the member organizations and of the individual members, designated or elected by procedures specified in the Bylaws.

Section 4.3

The Executive Committee shall consist of the following officers: chairman, vice chairman, past chairman, secretary, treasurer, chairman next International Conference, and past chairman of the Conference. Officers shall be elected by a procedure specified in the Bylaws.

Section 4.4

The chairman and the secretary of the Executive Committee shall act as the chairman and the

secretary of the Governing Board.

Section 4.5

Only members of the member organizations and individual members are eligible for any office. Names of candidates for office shall be not submitted or presented without their prior consent.

Section 4.6

The term of office of the members of the Governing Board shall be four years; the term of office of the officers of the Executive Committee shall be two years. Re-election is permissible with the restriction that the length of uninterrupted duty of chairman, vice chairman or secretary of the Executive Committee shall be four years at most.

Article V: Duties of the Officers

Section 5.1

The chairman assisted by the vice-chairman shall be responsible for the overall administration and leadership of the Association. He or she presides at meetings of the Governing Board and Executive Committee, and provides liaison between these two bodies.

Section 5.2

The vice-chairman shall be responsible for the duties of the chairman in case of absence.

Section 5.3

The secretary shall handle correspondence and maintain a correspondence file, and record minutes of the Governing Board and the Executive Committee.

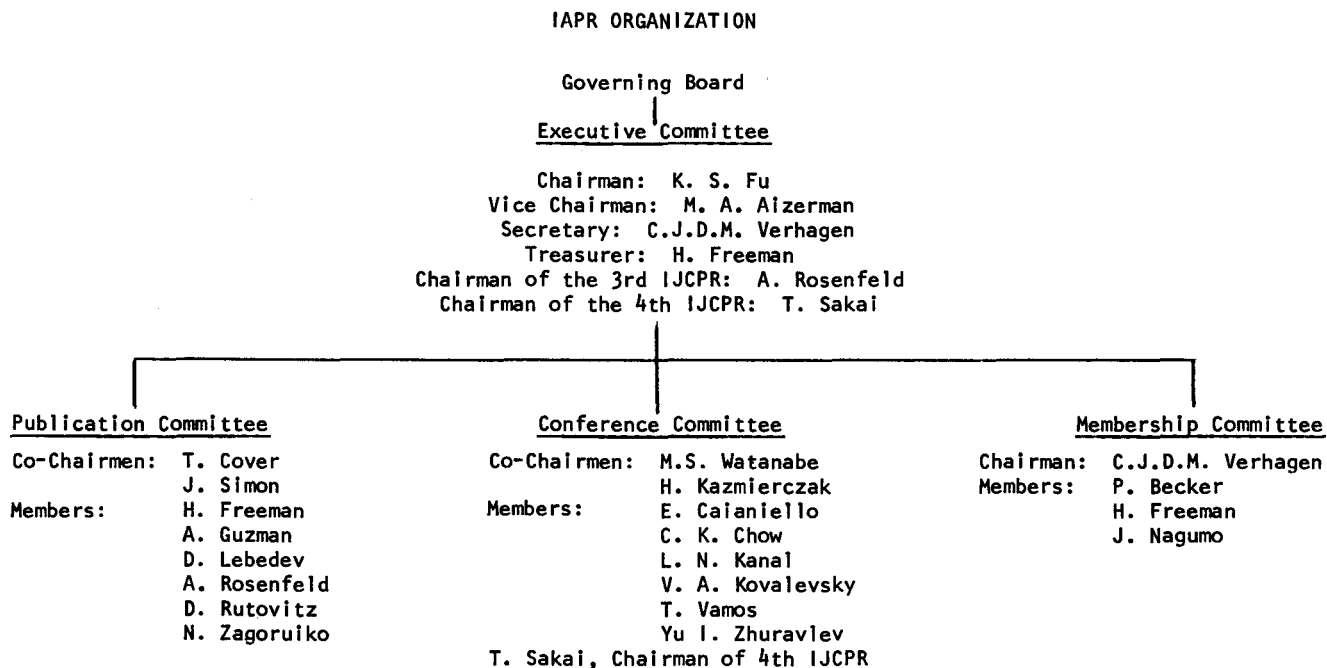


FIGURE 1

#### Section 5.4

The treasurer shall prepare the budget and maintain records of receipts and expenditures, unless (part of) this task is executed by officers of an affiliated organization.

#### Section 5.5

The chairman of the next International Conference shall be responsible for the organization of this conference. The responsibility may be shared with a committee, nominated by him.

#### Article VI: Financing

##### Section 6.1

The general financial policy of the Association, including the amount of eventual annual dues, and the budgets of the Conference, shall be discussed and adopted by the Governing Board. The Executive Committee shall be responsible for the execution of the general financial policy and for detailing the general policy. In case of emergency, and when there is no real opportunity to consult the Governing Board, the Executive Committee may make decisions conflicting with the adopted general policy of the Governing Board. The Executive Committee will have to render account of its financial actions

The Bylaws shall provide procedures concerning the authority of representatives and officers to bind the Association in financial affairs.

#### Article VII: Affiliation

##### Section 7.1

The Association may affiliate with international organizations. The intention of this affiliation is to facilitate cooperation in related fields, the coordination of conferences and the acquisition of facilities as to conferences, secretariat and treasury. The Governing Board shall have the final decision on conditions and procedures relating to such affiliations.

#### Article VIII: Committees

##### Section 8.1

The Governing Board and the Executive Committee may set up committees. The Governing Board shall elect a Nominating Committee. The functions of this committee shall be described in the Bylaws.

#### Article IX: Meetings

##### Section 9.1

A bi-annual meeting of the Governing Board of the Association shall be held during the International Conference. The Executive Committee shall hold meetings at such times as deemed necessary to carry on the management of the Association. The Bylaws shall provide procedures for obtaining decisions by the Governing Board and the Executive Committee both from the floor at a meeting and by written votes of their members in the case of a mail ballot.

##### Section 9.2

If at least 5 member organizations or 50 individual members ask for a general meeting of the Association concerning one or more specified items, the Executive Committee shall organize such a meeting during the next International Conference.

If at least 5 member organizations or 50 individual members ask for a mail ballot concerning one or more specified items, the Executive Committee shall organize such a mail ballot.

The Bylaws shall provide procedures for obtaining decisions both at a general meeting of the Association or by a mail ballot. Such decisions are binding on the Governing Board and the Executive Committee.

#### Article X: Regions

##### Section 10.1

Regional committees may be established if members of a region wish to do so. A region comprises a number of member organizations in a particular geographical area. Each regional committee shall conduct its activities within the Constitution and Bylaws of the Association.

#### Article XI: Conferences

##### Section 11.1

A bi-annual International Conference will be organized unless special circumstances prevent it. The Governing Board shall ensure that these Conferences take place successively in different parts of the world. The Bylaws shall provide procedures concerning the organization of conferences.

#### Article XII: Publications

##### Section 12.1

The Association may publish periodicals, journals, newsletters, proceedings, or special publications. The general policy concerning publications shall be determined by the Governing Board. A special committee may be established for this purpose, or the Executive Committee may take care of it.

##### Section 12.2

Each member organization and each individual member shall receive notice regarding meetings, conferences and other pertinent functions and activities of the Association. The Association may charge for sending this information to individuals.

#### Article XIII: Amendments

##### Section 13.1

Amendments to the Constitution of the Association or its Bylaws may be initiated by members of the Governing Board or the Executive Committee or by petition from at least 5 member organizations or 50 individual members.

The Bylaws shall provide procedures to handle the amendments.

#### Article XIV: Temporary provisions

##### Section 14.1

The Standing Committee for International Joint Conferences on Pattern Recognition will serve as Governing Board until the procedures mentioned in this constitution and the Bylaws are put into effect.

#### Acknowledgment

We would like to thank Ms. Marilyn S. Hersh for her conscientious work in editing this issue.

K. S. Fu

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